

What is claimed is:

1 1. A mobile agent transfer system for portable devices
2 comprising:

3 a server;

4 a portable device; and

5 wherein a mobile agent is transferred between said server
6 and said portable device;

7 wherein said server has a configuration so as to transfer,
8 to said portable device, a place code used to implement, on a side
9 of said portable device, an environment in which said mobile agent
10 is able to be executed when said mobile agent is transferred from
11 said server to said portable device; and

12 wherein said portable device has a configuration so as to
13 implement, on a side of said portable device and based on said
14 place code transferred from said server, an environment in which
15 said mobile agent is able to be executed.

1 2. The mobile agent transfer system for portable devices
2 according to Claim 1, wherein said place code is used to implement,
3 on said portable device, an agent unarchiving section used to
4 reconstruct said mobile agent based on information transmitted
5 from said server, a portable device side calculation processing
6 section to run said mobile agent reconstructed by said agent
7 unarchiving section, and an agent transmitting section used to
8 transmit said mobile agent having completed operations in said
9 portable device side calculation processing section to said
10 server and wherein said portable device has a program control
11 section to implement, on said portable device, said agent

12 unarchiving section, said portable device side calculation
13 processing section, said agent transmitting section based on said
14 place code transmitted from said server.

1 3. A mobile agent transfer system for mobile communicating
2 devices comprising:

3 a server;

4 a mobile communicating device;

5 an information transfer device to connect said mobile
6 communicating device to said server; and

7 wherein a mobile agent is transferred between said server
8 and said mobile communicating device through said information
9 transfer device;

10 wherein said server has a server side calculation
11 processing section to run said mobile agent, an agent transferring
12 section used to transfer, to said mobile communicating device,
13 information about an internal state of said mobile agent, a
14 program code of said mobile agent, a place code used to implement,
15 on said mobile communicating device, an agent reconstructing
16 section, mobile communicating device side calculation processing
17 section and agent transmitting section, and an agent receiving
18 section used to retrieve said mobile agent transferred from said
19 mobile communicating device and to put said mobile agent into a
20 state where said mobile agent is able to start operations in said
21 server side calculation processing section, and

22 wherein said mobile communicating device has a program
23 acquiring section used to acquire said information about an
24 internal state of said mobile agent, said program code of said
25 mobile agent, and said place code transmitted from said server

26 and a program control section to implement, on said mobile
27 communicating device, said agent reconstructing section, said
28 mobile communicating device side calculation processing section
29 and said agent transmitting section, based on said place code
30 acquired by said program acquiring section, wherein said agent
31 reconstructing section has a configuration so as to reconstruct
32 said mobile agent based on said information about internal states
33 of said mobile agent and said program code of said mobile agent,
34 wherein said mobile communicating device side calculation
35 processing section has a configuration so as to run said mobile
36 agent reconstructed by said agent reconstructing section and
37 wherein said agent transmitting section has a configuration so
38 as to transmit said mobile agent having completed operations in
39 said portable side calculation processing section to said server.

1 4. The mobile agent transfer system for mobile communicating
2 devices according to Claim 3, wherein said server has a standby
3 list creating section used to transmit, to said mobile
4 communicating device, a standby list showing mobile agents being
5 in a standby state to be transferred to said mobile communicating
6 device, wherein said mobile communicating device has a standby
7 list displaying section used to provide said standby list
8 transmitted from said server to a user or other device and to notify
9 said program acquiring section of said mobile agent selected by
10 said user or other device out of mobile agents indicated by said
11 provided standby list, and wherein said program acquiring section
12 has a configuration so as to make a request for acquiring said
13 mobile agent notified by said standby list displaying section to
14 said server.

1 5. The mobile agent transfer system for mobile communicating
2 devices according to Claim 3, wherein said server has a movement
3 number managing section used to create and manage a movement
4 number required to ignore messages other than a message that has
5 first arrived when a plurality of messages each having same
6 contents to transfer a mobile agent has reached said agent
7 receiving section from said agent transmitting section in said
8 mobile communicating device due to a failure of a network.

1 6. The mobile agent transfer system for mobile communicating
2 devices according to Claim 3, wherein said agent transferring
3 section has an agent waiting section used to manage information
4 about an identifier of a mobile agent and location of a program
5 code of said mobile agent being in a standby state to be transferred
6 to said mobile communicating device, a program description file
7 creating section used to make a request of a program archive
8 creating section to create an archive when a request for a program
9 description file for a mobile agent is made from said program
10 acquiring section and to return said program description file
11 containing a location of said archive created by said program
12 archive creating section to said program acquiring section, and
13 a program archive creating section used to create, in response
14 to a request from said program description file creating section,
15 an archive containing a program code of a mobile agent,
16 information about an internal state of said mobile agent, and a
17 place code, and to return, in response to a request from said
18 program acquiring section, said archive.

1 7. A method for transferring a mobile agent for portable

2 devices between a portable device and a server, said method
3 comprising:

4 a step in which said server transfers, to said portable
5 device, a place code used to implement, on a side of said portable
6 device, an environment in which said mobile agent is able to be
7 executed when said mobile agent is transferred from said server
8 to said portable device; and

9 a step in which said portable device implements, on said
10 portable device and based on said place code transferred from said
11 server, an environment in which said mobile agent is executed.

1 8. The method for transferring the mobile agent for portable
2 devices according to Claim 7, wherein said place code is used to
3 implement, on said portable device, an agent reconstructing
4 section used to reconstruct said mobile agent based on information
5 transmitted from said server, a portable device side calculation
6 processing section to run said mobile agent reconstructed by said
7 agent reconstructing section, and an agent transmitting section
8 used to transfer said mobile agent having completed operations
9 in said portable device side calculation processing section to
10 said server and wherein said portable device has a program control
11 section to implement, on said portable device and based on said
12 place code transmitted from said server, said agent
13 reconstructing section, said portable device side calculation
14 processing section and said agent transmitting section.

1 9. A method for transferring a mobile agent for portable
2 devices for transferring said mobile agent between a portable
3 device and a server, said method comprising:

4 a step in which said server transfers information about an
5 internal state of a mobile agent, a program code of said mobile
6 agent, and a place code used to implement, on said portable device,
7 an agent reconstructing section, portable device side calculation
8 processing section, and agent transmitting section, to said
9 portable device;

10 a step in which said portable device implements, based on
11 said place code transmitted from said server, said agent
12 reconstructing section, said portable device side calculation
13 processing section, and said agent transmitting section;

14 a step in which said agent reconstructing section
15 reconstructs said mobile agent, based on said information about
16 said internal states and said program code of said mobile agent
17 transmitted from said server;

18 a step in which said portable device side calculation
19 processing section executes said mobile agent that has been
20 reconstructed by said agent reconstructing section; and

21 a step in which said agent transmitting section transmits
22 said mobile agent having completed operations in said portable
23 device side calculation processing section.

1 10. The method for transferring the mobile agent for portable
2 devices according to Claim 9, wherein said server transmits, to
3 said portable device, a standby list showing mobile agents being
4 in a standby state to be transferred to said portable device and
5 wherein said portable device provides said standby list
6 transmitted from said server to a user or other device and to make
7 a request of said server for said mobile agent selected by said
8 user or other device out of mobile agents indicated by said

9 provided standby list.

1 11. The method for transferring the mobile agent for portable
2 devices according to Claim 9, wherein said server creates and
3 manages a movement number required to ignore messages other than
4 a message that has first arrived when a plurality of messages each
5 having same contents to transfer a mobile agent has reached said
6 agent receiving section from said portable device due to a failure
7 of a network.

1 12. A program for implementing a mobile agent transfer system
2 for portable devices to enable a mobile agent to be transferred
3 between a computer for a portable device and a computer for a server
4 comprising:

5 processing of having said computer for said server transfer
6 a place code used to implement, on said computer for said portable
7 device, an environment in which said mobile agent is able to be
8 executed when said mobile agent is transferred to said computer
9 for said portable device; and

10 processing of having said computer for said portable device
11 implement, on said computer for said portable device and based
12 on a place code transferred from said computer for said server,
13 an environment in which said mobile agent is able to be executed.

1 13. A program for implementing a mobile agent transfer system
2 for portable devices to enable a mobile agent to be transferred
3 between a computer for a portable device and a computer for a server
4 comprising:

5 processing of having said computer for said server function

6 as a server computer side calculation processing section to run
7 said mobile agent, as an agent transferring section to transfer,
8 to said computer for said portable device, information about
9 internal states of said mobile agent and about a program code of
10 said mobile agent and a place code used to implement, on said
11 computer for said portable device and based on internal states
12 and program code of said mobile agent transmitted from said
13 computer for said server, an agent unarchiving section to
14 reconstruct said mobile agent, portable device side calculation
15 processing section to run said mobile agent reconstructed by said
16 agent unarchiving section, and an agent transmitting section to
17 transmit said mobile agent having completed operations in said
18 portable device side calculation processing section to said
19 computer for said server, and as an agent receiving section to
20 unarchive said mobile agent transferred from said computer for
21 said portable device and to put said mobile agent into a state
22 where said mobile agent is able to start operations on said server
23 computer side calculation processing section, and

24 processing of having said computer for said portable device
25 function as a program acquiring section to acquire information
26 about internal states and program code of said mobile agent
27 transmitted from said computer for said server and a place code,
28 and as a program control section to implement, on said computer
29 for said portable device and based on said place code acquired
30 by said program acquiring section, said agent unarchiving section,
31 said portable device side calculation processing section, and
32 said agent transmitting section.

1 14. A storage medium storing a program for implementing a mobile

2 agent transfer system for portable devices to enable a mobile
3 agent to be transferred between a computer for a portable device
4 and a computer for a server comprising:

5 processing of having said computer for said server transfer
6 a place code used to implement, on said computer for said portable
7 device, an environment in which said mobile agent is able to be
8 executed when said mobile agent is transferred to said computer
9 for said portable device; and

10 processing of having said computer for said portable device
11 implement, on said computer for said portable device and based
12 on a place code transferred from said computer for said server,
13 an environment in which said mobile agent is able to be executed.

1 15. A storage medium storing a program for implementing a mobile
2 agent transfer system for portable devices to enable a mobile
3 agent to be transferred between a computer for a portable device
4 and a computer for a server comprising:

5 processing of having said computer for said server function
6 as a server computer side calculation processing section to run
7 said mobile agent, as an agent transferring section to transfer,
8 to said computer for said portable device, information about
9 internal states of said mobile agent and about a program code of
10 said mobile agent and a place code used to implement, on said
11 computer for said portable device and based on internal states
12 and program code of said mobile agent transmitted from said
13 computer for said server, an agent unarchiving section to
14 reconstruct said mobile agent, portable device side calculation
15 processing section to run said mobile agent reconstructed by said
16 agent unarchiving section, and an agent transmitting section to

17 transmit said mobile agent having completed operations in said
18 portable device side calculation processing section to said
19 computer for said server, and as an agent receiving section to
20 unarchive said mobile agent transferred from said computer for
21 said portable device and to put said mobile agent into a state
22 where said mobile agent is able to start operations on said server
23 computer side calculation processing section, and

24 processing of having said computer for said portable device
25 function as a program acquiring section to acquire information
26 about internal states and program code of said mobile agent
27 transmitted from said computer for said server and a place code,
28 and as a program control section to implement, on said computer
29 for said portable device and based on said place code acquired
30 by said program acquiring section, said agent unarchiving section,
31 said portable device side calculation processing section, and
32 said agent transmitting section.

1 16. A mobile agent transfer system for mobile communicating
2 devices comprising:

3 a server;

4 a mobile communicating device; and

5 wherein a mobile agent is transferred between said server
6 and said mobile communicating device;

7 wherein said server has a configuration so as to transfer,
8 to said mobile communicating device, a place code used to
9 implement, on a side of said mobile communicating device, an
10 environment in which said mobile agent is able to be executed when
11 said mobile agent is transferred from said server to said mobile
12 communicating device; and

13 wherein said mobile communicating device has a
14 configuration so as to implement, on a side of said mobile
15 communicating device and based on said place code transferred from
16 said server, an environment in which said mobile agent is able
17 to be executed.

1 17. The mobile agent transfer system for mobile communicating
2 devices according to Claim 16, wherein said place code is used
3 to implement, on said mobile communicating device, an agent
4 reconstructing section to reconstruct said mobile agent based on
5 information transmitted from said server, a mobile communicating
6 device side calculation processing section to run said mobile
7 agent reconstructed by said agent reconstructing section, and an
8 agent transmitting section used to transmit said mobile agent
9 having completed operations in said portable device side
10 calculation processing section to said server and wherein said
11 mobile communicating device has a program control section to
12 implement, on said mobile communicating device, said agent
13 reconstructing section, said mobile communicating device side
14 calculation processing section, said agent transmitting section
15 based on said place code transmitted from said server.